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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,694	07/09/2003	Yasuo Chiba	06410 USA	9700

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AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
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EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,694

Applicant(s)

CHIBA ET AL.

Examiner

Michael J. Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0304,0604,1204.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections – 35 USC § 102:

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-6 and 16-20 rejected under 35 U.S.C. 102(e) as being anticipated by Ye et al. (US Pat. No. 6,573,357).

Regarding claims 1-6, Ye et al. disclose: *(1)* a curable epoxy resin composition (column 1, lines 9-24), which comprises (a) a polyepoxide having two or more oxirane rings per molecule, which is optionally mixed with monoepoxide having one oxirane ring per molecule (column 1, lines 9-24); and (b) a ketimine as a curing agent (column 1, lines 9-24) which is a

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condensation reaction product (column 4, lines 1-51) of (1) an amine having two or more primary amino groups directly bonded to a cyclohexane ring and represented by the following general formulae *see claims for chemical structures* (column 5, lines 1-14), and (2) an aliphatic ketone (column 4, lines 52-67);

(2) wherein the ketimine is condensation reaction product of an aliphatic ketone (column 4, lines 52-67) with an amine selected from *see claim for list* (column 5, lines 1-14);

(3) wherein the ketimine is a condensation reaction product of an aliphatic ketone (column 4, lines 52-67) with an amine having two or more primary amino groups directly bonded to a cyclohexane ring selected from *see claim for list* (column 5, lines 1-14), the aliphatic ketone selected from *see claim for list* (column 4, lines 52-67);

(4) wherein the ketimine is a condensation reaction product of an aliphatic ketone (column 4, lines 52-67) with an amine selected from *see claim for list* (column 5, lines 1-14);

(5) wherein the ketimine is a condensation reaction product of an aliphatic ketone (column 4, lines 52-67) with an amine having two or more primary amino groups directly bonded to a cyclohexane ring (column 5, lines 1-14), the aliphatic ketone selected from *see claim for list* (column 4, lines 52-67); and

(6) wherein the ketimine is a condensation reaction product of 4-methyl-2-pentanone (column 4, lines 54-55) with an amine having two or more primary amino groups directly bonded to a cyclohexane ring (column 5, lines 1-14).

Regarding claims 16-20, Ye et al. disclose: (16) a ketimine (column 1, lines 9-24) which is a condensation reaction product (column 4, lines 1-51) of (1) an amine having two or more

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primary amino groups directly bonded to a cyclohexane ring and represented by the following general formulae *see claims for chemical structures* (column 5, lines 1-14), and (2) an aliphatic ketone (column 4, lines 52-67);

(17) in which the amine is selected from *see claim for list* (column 5, lines 1-14), and the ketone is selected from *see claim for list* (column 4, lines 52-67);

(18) in which the amine is selected from *see claim for list* (column 5, lines 1-14);

(19) in which the ketone is selected from *see claim for list* (column 4, lines 52-67); and

(20) in which the ketone is 4-methyl-2-pentanone (column 4, lines 54-55).

Claim Rejections – 35 USC § 103:

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (US Pat. No. 6,573,357) in view of Minato et al. (US Pat. No. 4,391,958).

Regarding claims 7-11, Ye et al. broadly disclose the use of their ketimine as a curing agent in epoxy resin systems; however, they fail to elaborate on the specific epoxy materials that are suitable for use with their ketimine curing agent.

Minato et al. disclose an epoxy resin system that features a ketimine as a curing agent (*see Abstract*). Their list of suitable epoxy resins overlaps with the resins set forth in instant claims 7-11 (*see column 3, lines 50-60*). Where the ketimine of Ye et al. is an improvement over

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previous ketimines it would appear that these epoxy resins would have also been considered suitable for use with the ketimine of Ye et al. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – see *MPEP 2144.07*.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use an epoxy resin set forth in instant claims 7-11, as taught by Minato et al., in the composition of Ye et al. because the ketimine of Ye et al. is considered an improvement over previous ketimines and the teachings of Minato et al. demonstrate that these epoxy resins are recognized in the art as suitable for use with ketimine curing agents.

5. Claims 7-10, 12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (US Pat. No. 6,573,357) in view of Suzuki et al. (US Pat. No. 5,684,094).

Regarding claims 7-10, 12, 14, and 15, Ye et al. broadly disclose the use of their ketimine as a curing agent in epoxy resin systems; however, they fail to elaborate on the specific epoxy materials that are suitable for use with their ketimine curing agent.

Suzuki et al. disclose an epoxy resin system that features a ketimine as a curing agent (*see Abstract*). Their list of suitable epoxy resins overlaps with the resins set forth in instant claims 7-10, 12, 14, and 15 (*see column 5, lines 34-60*). Where the ketimine of Ye et al. is an improvement over previous ketimines it would appear that these epoxy resins would have also been considered suitable for use with the ketimine of Ye et al. In light of this, it has been found that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination – see *MPEP 2144.07*.

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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use an epoxy resin set forth in instant claims 7-10, 12, 14, and 15, as taught by Suzuki et al., in the composition of Ye et al. because the ketimine of Ye et al. is considered an improvement over previous ketimines and the teachings of Suzuki et al. demonstrate that these epoxy resins are recognized in the art as suitable for use with ketimine curing agents.

Allowable Subject Matter:

6. Claim 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 13, the prior art fails to teach or suggest the use of a glycidylaminoglycidyl ester, obtained by reacting an aminobenzoic acid with epichlorohydrin, in concert with a ketimine curing agent.

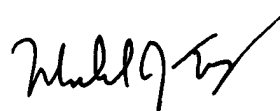
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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely
Patent Examiner
Art Unit 1712

February 22, 2005